

Landfill Issues

by

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What is a Landfill?

- ✦ RCRA defines disposal as:
 - “deposit of hazardous wastes into or on land or water in such a way that hazardous wastes or constituents from the waste may be emitted to air, surface water or groundwater”
- ✦ Under this definition, a **landfill** is a disposal option; recognized as an **alternative** to directly disposing of waste to the environment

Treatment or Storage?

- ✦ RCRA defines treatment as:
 - “physical, chemical or biological processes intended to detoxify or neutralize hazardous wastes, to reduce their volume or to make hazardous waste amenable for recovery, storage or transport”
- ✦ RCRA defines storage as:
 - “containment of hazardous waste so as not to constitute disposal”

LANDFILLS

Decision Making

- ✦ Considerations for Containment/Closure
- ✦ Consolidation/Cell Management
- ✦ New Approaches
- ✦ Reuse and Redevelopment

LANDFILLS - DECISION MAKING

Capping

✦ Effectiveness

- Location
- Future Land Use
- Contaminants Contained in the Landfill
- Long-term Monitoring Considerations

✦ Selecting a Material

✦ Costs

LANDFILLS - DECISION MAKING

Consolidation

Consolidating landfill materials into one unit has some benefits and some risks:

✦ The benefits include:

- A single manageable unit
- Consolidation of monitoring
- Creates clear areas for property transfer

✦ The risks include:

- Co-mingling waste that are not compatible
- Co-mingling liabilities

LANDFILLS - DECISION MAKING

Consolidation (cont.)

- ✦ Compatibility of waste
- ✦ Monitoring requirements
- ✦ Remediation

LANDFILLS - DECISION MAKING

New Approaches

- ✦ Environmental Isolation/Co-existence
- ✦ Wetland/Habitat Construction

LANDFILLS - DECISION MAKING

Reuse and Redevelopment

- ✦ *The Ultimate Brownfield -*
- ✦ Redevelopment Benefits
- ✦ Redevelopment Hurdles
- ✦ Risk and Liability Exposure

LANDFILLS

Long Term Monitoring (LTM)

- ✦ Environmental Setting
- ✦ Institutional Controls
- ✦ Property Transfer Effects
- ✦ Long Term Material Stability
- ✦ Minimization and Costs
- ✦ Liability

LANDFILLS

Limiting Cost/Cost Effectiveness

- ✦ Cost benefit analysis
- ✦ Natural solutions
- ✦ Public Concern

LANDFILLS - CASE STUDY

Ft. Ord



LANDFILLS - CASE STUDY

Ft. Ord (cont.)

- ✦ US ACE consolidated 500,000 cu yds of debris from other projects into one landfill unit
 - Preventing direct exposure of the material
 - Restricting rainfall infiltration
 - Preventing leaching to groundwater
 - Controlling migration of methane and other semi-volatile compounds to surface

LANDFILLS - CASE STUDY

Ft. Ord (cont.)

- ✦ Resulted in identification of other clear areas where property could be transferred without building or deed restrictions
- ✦ Long-term maintenance of cap over off-site disposal
- ✦ Monitoring requirements incorporated into existing landfill

LANDFILLS - CASE STUDY

Ft. Ord (cont.)



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Landfills - Case Study

Marine Air Station El Toro

- ✦ 4 Landfills
- ✦ Feasibility studies addressed:
 - classification of waste
 - consolidation of waste
 - state agency concurrence on options

Landfills - Case Study

Marine Air Station El Toro (cont.)

- ✦ Investigation revealed only municipal-type waste contained in landfills, therefore solutions included:
 - Consolidation to reduce “footprint”
 - Clean closure
 - Moving one landfill on top of the other, maximizing existing monitoring